

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What is claimed is:

1. (Currently Amended) A method for estimating a signal to interference ratio (SIR) of a signal transmitted from a first unit ~~and~~ to a remotely located second unit in a Wideband Code Division Multiple Access (WCDMA) wireless communication system, said signal being transmitted through an air interface and comprising pilot and data symbols, characterised by the steps of the method comprising

verifying (5.40) a transmitted Transmit Power Control (TPC) command, by and determining if said TPC command has been correctly received, and weighting said pilot and data symbols; and

giving a SIR estimation (5.50) depending on the result of said TPC verification (5.40).

2. (Currently Amended) [[A]] The method according to claim 1, further characterised in that said TPC verification step comprises the step of weighing said pilot and data symbols, wherein said weighting comprises taking into account a power change in said data symbols due to a prior TPC change.

3. The method according to claim 1, further characterised by comprising encoding said data symbols using space-time transmit diversity (STTD).

4. (Currently Amended) [[A]] The method according to claim 1, further characterised in that wherein interference is estimated from said pilot symbols.

5. (Currently Amended) [[A]] The method according to claim 4, further characterised in that the estimated interference is filtered.

6. (Currently Amended) [[A]] The method according to claim 1, characterised in that wherein the first unit is a base station and the second unit is a mobile unit.

7. (Currently Amended) [[A]] The method according to claim 1, characterised in that wherein the first unit is a mobile unit and the second unit is a base station.

8. (Currently Amended) A device [[(100)]] for estimating a signal to interference ratio (SIR) of a signal transmitted from a first unit and to a remotely located second unit in a Wideband Code Division Multiple Access (WCDMA) wireless communication system, said signal being transmitted through an air interface, characterised in that wherein said device comprises

a means for Transmit Power Control (TPC) verification [[(40)]] having an output signal, wherein said TPC verification means is arranged to weigh[[t]] said pilot and data symbols and comprises means for determining if said TPC command have been correctly received; and

a means for SIR estimation, [[(50)]] and that using said output signal as input signal and being arranged to estimate the SIR estimation depending [[s]] on said output of said TPC verification unit.

9. (Currently Amended) [[A]] The device [[(100)]] according to claim 8, further characterised in that wherein said TPC verification unit weighs said pilot and data symbols.

10. (Currently Amended) [[A]] The device [[(100)]] according to claim 8, further characterised in that wherein said data symbols are encoded using space-time transmit diversity (STTD).

11. (Currently Amended) [[A]] The device [[(100)]] according to claim 8, characterised by further comprising a means for estimating interference from said pilot symbols.

12. (Currently Amended) [[A]] The device [[(100)]] according to claim 11, characterised by further comprising a filter for filtering said estimated interference.

13. (Currently Amended) [[A]] The device [[(100)]] according to claim 8, further characterised in that wherein the first unit is a base station and the second unit is a mobile unit.

14. (Currently Amended) [[A]] The device [[(100)]] according to claim 8, further characterised in that wherein the first unit is a mobile unit and the second unit is a base station.

15. (Currently Amended) A computer readable medium having a plurality of computer-executable instructions for performing the method according to claim 1, characterised by comprising:

a program module for TPC verification giving instructions to a computer, and
a program module for SIR estimation giving instructions to a computer,
depending on the Transmit Power Control (TPC) verification .

16. (New) The method according to claim 1, wherein said giving a SIR estimation depending on the result of said TPC verification comprises
if said TPC command has been correctly received, the estimated SIR at time n is given as

$$SIR_{est}^{(n)} = \frac{w_3 P_3^{(n-1)} \cdot 10^{0.1\Delta_{TPC}} + w_1 P_1^{(n)} \cdot 10^{0.1\Delta_{rel}} + w_2 P_2^{(n)}}{N^{(n)}} - 1$$

and if said TPC command has not been correctly received, the estimated SIR at time n is given as

$$SIR_{est}^{(n)} = \frac{w_3 P_3^{(n-1)} \cdot 10^{-0.1\Delta_{TPC}} + w_1 P_1^{(n)} \cdot 10^{0.1\Delta_{rel}} + w_2 P_2^{(n)}}{N^{(n)}} - 1 \quad ; \text{ where}$$

$w_i \geq 0, \text{ for } i = 1, \dots, 3, P_i^{(n)}$

is the average received power for the symbol or a subset of symbols in interval $I_i^{(n)}$,
 $N^{(n)}$ is the estimated interference at time n , Δ_{TPC} is a change of power in dB, resulting from a prior TPC command, and Δ_{rel} is a relative power discrepancy between pilot and data symbols in dB.